

Docket Number: 081468-0308101
Client Reference: P-1810.000-US

JRW
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

DUINEVELD et al.

Group Art Unit: 2854

Application No.: 10/773,461

Examiner: Unassigned

Filed: February 9, 2004

Confirmation No.: 3607

For: LITHOGRAPHIC APPARATUS AND DEVICE MANUFACTURING METHOD



November 2, 2004

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. 1.56, the attention of the Patent and Trademark Office is hereby directed to the following U.S. patent application(s):

Examiner's Initials	First Inventor	Application No.	Filing Date	Enclosed
<i>JS</i>	DE SMIT (081468-0309173)	10/820,227	04/08/2004	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	DE SMIT (081468-0309978)	10/860,662	06/04/2004	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	DUINEVELD et al. (081468-0308101)	10/773,461	02/09/2004	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	FLAGELLO et al. (081468-0302644)	10/698,012	10/31/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	DE SMIT et al. (081468-0306530)	10/705,804	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	LOF et al. (081468-0306781)	10/705,805	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
<i>✓</i>	LOF et al. (081468-0306524)	10/705,783	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card

Examiner's Initials	First Inventor	Application No.	Filing Date	Enclosed
<i>f/12</i>	VAN SANTEN et al. (081468-0307331)	10/743,271	12/23/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	MULKENS et al. (081468-0307333)	10/743,266	12/23/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	DERKSEN et al. (081468-0306526)	10/705,785	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	SIMON et al. (081468-0307087)	10/724,402	12/01/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	BLEEKER (081468-0306527)	10/715,116	11/18/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	STREEFKERK et al. (081468-0306882)	10/719,683	11/24/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	LOF et al. (081468-0306525)	10/705,816	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	DIERICHs (081468-0308270)	10/775,326	02/11/2004	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	LOF et al. (081468-0309957)	10/857,614	06/01/2004	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
<i>✓</i>	SUWA et al. (Reissue Application of U.S. Patent No. 6,191,429 B1)	10/367,910	02/19/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input type="checkbox"/> Other: stamped receipt card

*The Examiner's initials adjacent a citation indicates he/she has considered the cited application relative to the subject application.

It is respectfully requested that these applications and the art cited therein during examination be expressly considered during the prosecution of this application and be made of record in this application. The identification of the above U.S. patent applications is not to be construed as a waiver of secrecy as to those applications now or upon issuance of the present application as a patent.

PLEASE DO NOT PRINT the above information on the patent which results from this application.



Atty.
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BY APPLICANT**

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Examiner: Unknown *G. J. H. G.*

Group Art Unit: 2854.2851

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
<i>KJ</i>	AR 3,573,975	04/1971	DHAKA et al.	117	212	
	BR 3,648,587	03/1972	STEVENS	95	44	
	CR 4,346,164	08/1982	TABARELLI et al.	430	311	
	DR 4,390,273	06/1983	LOEBACH et al.	355	125	
	ER 4,396,705	08/1983	AKEYAMA et al.	430	326	
	FR 4,480,910	11/1984	TAKANASHI et al.	355	30	
	GR 4,509,852	04/1985	TABARELLI et al.	355	30	
	HR 5,040,020	08/1991	RAUSCHENBACH et al.	355	53	
	IR 5,121,256	06/1992	CORLE et al.	359	664	
	JR 5,610,683	03/1997	TAKAHASHI	355	53	
	KR 5,715,039	02/1998	FUKUDA et al.	355	53	
	LR 5,825,043	10/1998	SUWA	250	548	
	MR 5,900,354	05/1999	BATCHELDER	430	395	
<i>↓</i>	NR 6,191,429	02/2001	SUWA	250	548	

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	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
					Enclosed	No	Enclosed	No
<i>KJ</i>	OR WO 99/49504	09/1999	PCT	FUKAMI et al.	X		X	
	PR EP 0023231	02/1981	EUROPE	TABARELLI et al.	X			
	QR EP 0418427	03/1991	EUROPE	MIYAKE	X		X	
	RR EP 1039511	09/2000	EUROPE	MURAKAMI et al.	X		X	
	SR DD 224448	07/1985	GERMANY	HESSE et al.		X		
	TR DD 242880	02/1987	GERMANY	KUCH		X		
	UR FR 2474708	07/1981	FRANCE	LETELLIER		X		
	VR JP 62-065326	03/1987	JAPAN	MORIUCHI	X			
	WR JP 62-121417	06/1987	JAPAN	NAKAZAWA	X			
	XR JP 63-157419	06/1988	JAPAN	NAKASUJI	X			
	YR JP 04-305915	10/1992	JAPAN	OZEKI et al.	X			
	ZR JP 04-305917	10/1992	JAPAN	OZEKI et al.	X			
<i>↓</i>	AAR JP 06-124873	05/1994	JAPAN	TAKAHASHI	X		X	

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

<i>KJ</i>	BBR	M. SWITKES et al., "Immersion Lithography at 157 nm", MIT Lincoln Lab, Orlando 2001-1, December 17, 2001				
<i>↓</i>	CCR	M. SWITKES et al., "Immersion Lithography at 157 nm", J. Vac. Sci. Technol. B., Vol. 19, No. 6, November/December 2001, pp. 2353-2356				
<i>↓</i>	DDR	M. SWITKES et al., "Immersion Lithography: Optics for the 50 nm Node", 157 Anvers-1, September 4, 2002				

Examiner *Kevin G. Galt*

Date Considered: 7-12-2005

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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Examiner: ~~Unknown~~ Group Art Unit: ~~2854~~ 2851

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
<i>PL</i>	AR	6,560,032	05/2003	HATANO	359	656	
	BR	6,600,547	07/2003	WATSON et al.			
	CR	6,603,130	08/2003	BISSCHOPS et al.	250	492.1	
	DR	6,633,365	10/2003	SUENAGA	355	53	
	ER	2002/0163629	11/2002	SWITKES et al.	355	53	
	FR	2003/0123040	07/2003	ALMOGY	355	69	
	GR	2003/0174408	09/2003	ROSTALSKI et al.	359	642	
	HR	2004/0000627 A1	01/2004	SCHUSTER			
	IR	2004/0021844 A1	02/2004	SUENAGA			
	JR	2004/0075895 A1	04/2004	LIN	359	380	
<i>✓</i>	KR	2004/0109237 A1	06/2004	EPPLÉ et al.			

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		Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
						Enclosed	No	Enclosed	No
<i>PL</i>	LR	JP 07-220990	08/1995	JAPAN	FUKUDA et al.	X			
	MR	JP 10-228661	08/1998	JAPAN	KUROKAWA	X			
	NR	JP 10-255319	09/1998	JAPAN	SUENAGA et al.	X			
	OR	JP 10-303114	11/1998	JAPAN	SUWA	X		X	
	PR	JP 10-340846	12/1998	JAPAN	KUDO	X		X	
	QR	JP 2001-091849	04/2001	JAPAN	AIZAKI et al.	X			
	RR	JP 07-132262	05/1995	Japan	HIRAKAWA et al.	X			
	SR	JP 58-202448	11/1983	Japan	KAWAMURA et al.	X			
	TR	WO 2004/019128	03/2004	PCT	OMURA et al.	X		X	
	UR	WO 03/077037	09/2003	PCT	ROSTALSKI et al.	X		X	
<i>✓</i>	VR	WO 03/077036	09/2003	PCT	SCHUSTER	X			

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<i>PL</i>	WR	B.J. LIN, "Drivers, Prospects and Challenges for Immersion Lithography", TSMC, Inc., September 2002			
	XR	B.J. LIN, "Proximity Printing Through Liquid", IBM Technical Disclosure Bulletin, Vol.20, No. 11B, April 1978, p. 4997			
	YR	B.J. LIN, "The Paths To Subhalf-Micrometer Optical Lithography", SPIE Vol. 922, Optical/Laser Microlithography (1988), pp. 256-269			
	ZR	G.W.W. STEVENS, "Reduction of Waste Resulting from Mask Defects", Solid State Technology, August 1978, Vol.21 008, pp. 68-72			
	AAR	S. OWA et al., "Immersion Lithography; its potential performance and issues", SPIE Microlithography 2003, 5040-186, February 27, 2003			
<i>✓</i>	BBR	S. OWA et al., "Advantage and Feasibility of Immersion Lithography", Proc. SPIE 5040 (2003)			

Examiner

Date Considered:

7-12-2005

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FORM PTO-1449 (modified)
To: U.S. Department of Commerce
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Patent and Trademark Office

Atty. Dkt. No.	M#	Client Ref.
	308101	P-1810.000-US

**INFORMATION DISCLOSURE STATEMENT
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Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
	AR 6,236,634 B1	05/2001	LEE et al.	369	112	
	BR 2002/0020821 A1	02/2002	VAN SANTEN et al.	250	492	

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		Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
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<input checked="" type="checkbox"/>	CR	DD 206 607	02/1984	GERMANY	WESTPHAL et al.		X		
<input checked="" type="checkbox"/>	DR	DD 221 563	04/1985	GERMANY	PFORR et al.		X		
<input checked="" type="checkbox"/>	ER	JP 11-176727	07/1999	JAPAN	SHIRAI	X			
<input checked="" type="checkbox"/>	FR	JP 2000-058436	02/2000	JAPAN	FUJISHIMA et al.	X			
<input checked="" type="checkbox"/>	GR	WO 2004/053950 A1	06/2004	PCT	OWA	X			
<input checked="" type="checkbox"/>	HR	WO 2004/053951 A1	06/2004	PCT	MAGOME et al.	X			
<input checked="" type="checkbox"/>	IR	WO 2004/053952 A1	06/2004	PCT	MAGOME et al.	X			
<input checked="" type="checkbox"/>	JR	WO 2004/053953 A1	06/2004	PCT	NEI et al.	X			
<input checked="" type="checkbox"/>	KR	WO 2004/053954 A1	06/2004	PCT	NEI et al.	X			
<input checked="" type="checkbox"/>	LR	WO 2004/053955 A1	06/2004	PCT	HIRUKAWA et al.	X			
<input checked="" type="checkbox"/>	MR	WO 2004/053956 A1	06/2004	PCT	NAGASAKA et al.	X			
<input checked="" type="checkbox"/>	NR	WO 2004/053957 A1	06/2004	PCT	HIDAKA et al.	X			
<input checked="" type="checkbox"/>	OR	WO 2004/053958 A1	06/2004	PCT	MIZUTANI et al.	X			
<input checked="" type="checkbox"/>	PR	WO 2004/053959 A1	06/2004	PCT	SHIRAI	X			
<input checked="" type="checkbox"/>	QR	WO 2004/053596 A2	06/2004	PCT	GRAUPNER	X			

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<input checked="" type="checkbox"/>	RR	Nikon Precision Europe GmbH, "Investor Relations - Nikon's Real Solutions", May 15, 2003			
<input checked="" type="checkbox"/>	SR	H. KAWATA et al., "Optical Projection Lithography using Lenses with Numerical Apertures Greater than Unity", Microelectronic Engineering 9 (1989), pp. 31-36			
<input checked="" type="checkbox"/>	TR	J.A. HOFFNAGLE et al., "Liquid Immersion Deep-Ultraviolet Interferometric Lithography", J. Vac. Sci. Technol. B., Vol. 17, No. 6, November/December 1999, pp. 3306-3309			
<input checked="" type="checkbox"/>	UR	B.W. SMITH et al., "Immersion Optical Lithography at 193nm", FUTURE FAB International, Vol. 15, July 11, 2003			
<input checked="" type="checkbox"/>	VR	H. KAWATA et al., "Fabrication of 0.2µm Fine Patterns Using Optical Projection Lithography with an Oil Immersion Lens", Jpn. J. Appl. Phys. Vol. 31 (1992), pp. 4174-4177			
<input checked="" type="checkbox"/>	WR	G. OWEN et al., "1/8µm Optical Lithography", J. Vac. Sci. Technol. B., Vol. 10, No. 6, November/December 1992, pp. 3032-3036			
<input checked="" type="checkbox"/>	XR	H. HOGAN, "New Semiconductor Lithography Makes a Splash", PHOTONICS SPECTRA, Photonics TechnologyWorld, October 2003 Edition, pgs. 1-3			
<input checked="" type="checkbox"/>	YR	S. OWA and N. NAGASAKA, "Potential Performance and Feasibility of Immersion Lithography", NGL Workshop 2003, July 10, 2003, Slide Nos. 1-33.			

Examiner *Kem* Date Considered: 7-12-2005

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Examiner: Unknown

Group Art Unit: 2854 2951

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
12	ZR 2004/0119954	06/2004	KAWASHIMA et al.	355	30	
12	AAR 2004/0125351	07/2004	KRAUTSCHIK et al.	355	53	
	BBR					
	CCR					
	DDR					
	EER					
	FFR					
	GGR					

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	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
					Enclosed	No	Enclosed	No
12	HHR WO 2004/055803 A1	07/2004	PCT	VAN SANTEN	X		X	
12	IIR WO 2004/057589 A1	07/2004	PCT	NEIJZEN et al.	X		X	
12	JJR WO 2004/057590 A1	07/2004	PCT	VAN SANTEN et al.	X		X	
12	KKR JP 2004-193252	07/2004	Japan	Not Available	X			
	LLR							
	MMR							
	NNR							
	OOR							

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12	PPR	S. OWA et al., "Update on 193nm immersion exposure tool", Litho Forum, International SEMATECH, Los Angeles, January 27-29, 2004, Slide Nos. 1-51				
	QQR	H. HATA, "The Development of Immersion Exposure Tools", Litho Forum, International SEMATECH, Los Angeles, January 27-29, 2004, Slide Nos. 1-22				
	RRR	T. MATSUYAMA et al., "Nikon Projection Lens Update", SPIE Microlithography 2004, 5377-65, March, 2004				
	SSR	"Depth-of-Focus Enhancement Using High Refractive Index Layer on the Imaging Layer", IBM Technical Disclosure Bulletin, Vol. 27, No. 11, April 1985, p. 6521				
	TTR	A. SUZUKI, "Lithography Advances on Multiple Fronts", EEdesign, EE Times, January 5, 2004				
	UUR	B. LIN, "The k_3 coefficient in nonparaxial λ/NA scaling equations for resolution, depth of focus, and immersion lithography, <i>J. Microlith., Microfab., Microsyst.</i> 1(1):7-12 (2002)				
	VVR					
	WWI					
	XXR					
	YYR					
	ZZR					

Examiner

Date Considered: 7/2/2005

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Applicant: DUINEVELD et al.	
Appln. No.: TO BE ASSIGNED	
Filing Date: February 9, 2004	
Examiner: <i>Gutierrez</i>	Group Art Unit: 2851

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U.S. PATENT DOCUMENTS

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	AR					
	BR					
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	FR					
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	KR					
	LR					
	MR					
	NR					
	OR					

FOREIGN PATENT DOCUMENTS

	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
					Enclosed	No	Enclose	No
<i>PR</i>	WO99/49504	09/1999	PCT	FUKAMI ET AL.	X			
	QR							
	RR							
	SR							
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	VR							

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

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	BBR							
	CCR							
	DDR							

Examiner *Kov* *Gutierrez* Date Considered: *7-12-2005*

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